

---

$^{13}\text{C}(\text{He},\alpha)$     **1974Ba42,1975Ma34**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu		NP A968, 71 (2017)	1-Jan-2017

1966Ke08:  $^{13}\text{C}(\text{He},\alpha)$  E=12,15, 18 MeV, measured  $\sigma(E,\theta)$ .

1968Ar12:  $^{13}\text{C}(\text{He},\alpha\gamma)$  E=19-37 MeV, measured  $\sigma(E,\theta)$ .

1969Ta09:  $^{13}\text{C}(\text{He},\alpha\gamma)$  E=2.6-12 MeV.

1970Re09:  $^{13}\text{C}(\text{He},\alpha)$  E=2.5 MeV, measures  $\sigma(E_\alpha, E_\gamma)$ ,  $\alpha\alpha$ -coin.,  $^{12}\text{C}$  deduced  $\Gamma_\gamma/\Gamma$ ,  $\Gamma_\alpha/\Gamma$ .

1971Bo26:  $^{13}\text{C}(\text{He},\alpha)$  E=1.8-5.4 MeV; measured  $\sigma(E,\theta)$ .

1974Ba42:  $^{13}\text{C}(\text{He},\alpha\gamma)$  E=15 MeV;  $^{12}\text{C}$  deduced  $\Gamma_\alpha/\Gamma$ .

1975Ma34:  $^{13}\text{C}(\text{He},\alpha)$  E=4 MeV; measured  $\alpha$ - $^{12}\text{C}$  coincidence, Deduced  $\Gamma_{\text{rad}}/\Gamma$ .

$^{12}\text{C}$  Levels

E(level)	S	Comments
0		
$4.4 \times 10^3$		
$7.65 \times 10^3$		$\Gamma_{\text{rad}}/\Gamma = (4.16/11) \times 10^{-4}$ ( <a href="#">1975Ma34</a> ).
$9.65 \times 10^3$	2	
$10.84 \times 10^3$		
$11.8 \times 10^3$		
$12.7 \times 10^3$		
$13.3 \times 10^3$		
$14.08 \times 10^3$		E(level): Reported in the $^{13}\text{C}(\text{He},t)$ $^{13}\text{N} \rightarrow ^{12}\text{C}^*$ (14.08 MeV)+p reaction.
$15.11 \times 10^3$		$\Gamma_\alpha/\Gamma = (0.041/9)$ : <a href="#">1974Ba42</a> ; hence using $\Gamma = 43.6$ eV/10 yields $\Gamma_\alpha = 1.8$ eV/4. Others: $\Gamma_\alpha/\Gamma = (0.012/7)$ : <a href="#">1970Re09</a> and (0.060/25: see <a href="#">1975Aj02</a> ). See $\gamma$ branching ratios from ( <a href="#">1972Al03</a> ) $^{10}\text{B}(\text{He},p)$ .
$16.11 \times 10^3$		E(level): Reported in the $^{13}\text{C}(\text{He},t)$ $^{13}\text{N} \rightarrow ^{12}\text{C}^*$ (16.11)+p reaction.

$\gamma(^{12}\text{C})$

$E_\gamma$	$E_i(\text{level})$	$E_f$	Comments
$12.7 \times 10^3$	$12.7 \times 10^3$	0	See $\gamma$ branching ratios from ( <a href="#">1972Al03</a> ) $^{10}\text{B}(\text{He},p)$ .
$15.11 \times 10^3$	$15.11 \times 10^3$	0	

---

$^{13}\text{C}({}^3\text{He},\alpha)$     1974Ba42,1975Ma34

Level Scheme

